

REMARKS

Upon entry of the present Amendment-B the claims in the application are claims 3 and 4, of which claim 3 is independent. Claims 1 and 2 are canceled herein. Also, applicant is filing a Petition for Two Month Extension of time concurrently herewith.

Claim 3 has been amended here in to be written in independent form and to include the limitations of both claims 1 and 2, from which it formerly depended. Claim 4 has been amended herein to depend from and be consistent with claim 3.

Applicant respectfully submits that the above amendments are fully supported by the original disclosure, including the drawings, claims and abstract. Applicant further respectfully submits that no new matter is introduced by the amendments made herein.

The above-identified Office Action has been reviewed, the references carefully considered, and the Examiner's comments carefully weighed. In view thereof, the present Amendment is submitted. It is contended that by the present amendment, all bases of rejection set forth in the Office Action have been traversed and overcome. Accordingly, reconsideration and withdrawal of the rejection is respectfully requested.

Claim Rejections -35 USC 102

Claims 1-4 have been rejected (non-final) by the Examiner under 35 U.S.C. 102(b) as being anticipated by Walenty et al (US 5139315), Shirai et al (US 6158822), or Arnold (US 640612). Applicant has carefully considered such rejections but respectfully traverses each of the same, and submits that each of present claims 3-4 is clearly patentably over all of these references (whether considered singly or in combination), based on the following.

The Standard for Anticipation

In the case of *Motorola, Inc. v. Interdigital Technology Corp.*, 121 F. 3d 1461 (CAFC 1997), the Court of Appeals for the Federal Circuit stated:

“For a prior art reference to anticipate a claim, the reference must disclose each and every element of the claim with sufficient clarity to prove its existence in the prior art (citation omitted). ‘The (prior art) reference must describe the applicant’s claimed invention sufficiently to have placed a person of ordinary skill in the field of the invention in possession of it’ (citations omitted) . Although this disclosure requirement presupposes the knowledge of one skilled in the art of the claimed invention, that presumed knowledge does not grant a license to read into the prior art reference teachings that are not there.”

The above-quoted passage is consistent with many previous cases of the Federal Circuit and with MPEP 2131, which reiterate the requirement that *in order to anticipate a claim, a reference must teach every element of the claim.*

Applicant respectfully submits that neither Walenty et al, Shirai et al., nor Arnold disclose each and every element of applicant’s claimed invention as discussed below in detail for each of these references.

1. Walenty discloses a vehicle parking brake system wherein parking brake pressure is automatically controlled by a CPU when commanded by the vehicle operator. The vehicle operator commands parking brake pressure application by closing a parking brake switch. If the vehicle speed is zero, a CPU determines whether the brake is fully applied by applying a parking brake engage current to the electric motors of the rear brakes for a predetermined time. If the vehicle speed is not zero, the CPU provides for controlled ramped increase in brake pressure applied to the

rear wheels, while monitoring and compensating for wheel slip using an ABS system.

As regards claim 3, as amended herein to include the features of cancelled claims 1 and 2, Walenty discloses a parking brake activated by an electric motor, but does not disclose operation of the parking brake such that the vehicle is decelerated at a target deceleration of predetermined magnitude. Rather, Walenty is silent as to monitoring and controlling braking based on a rate of vehicle deceleration, and in fact does not appear to monitor vehicle acceleration/deceleration at all. Instead, Walenty discloses control based on increasing brake pressure in a ramped fashion until wheel slip occurs. Thus, Walenty's disclosure does not anticipate the features formerly recited in claim 1 and now recited in claim 3.

Walenty discloses an operation command based on the operation of an operating member (switch 22) by the driver, but does not disclose setting a predetermined magnitude of the target deceleration, and further does not disclose setting a predetermined magnitude of the target deceleration based on an amount of operation of the switch 22 as required by the present claims. The switch 22 disclosed by Walenty operates to initiate or disable the automated brake function (col. 2, lines 46-48). Switch 22 remains in the position it is switched to, so that once it is turned on it remains on until turned off. Further, the length of time switch 22 is in the on position has no effect on brake function, rather Walenty discloses controlling brake function by monitoring brake motor current and wheel slip. In the system of Walenty, once the operation of the parking brake is initiated by the operator by activation of switch 22, all control is provided by the CPU. The only additional control or system input provided to Walenty's operator is to deactivate the parking brake system by toggling switch 22 to an off position.

Walenty does not disclose a switch that is held at the operation command only while kept

depressed by the driver, an amount of operation constituted by the number of changeovers to the command operation position, or modification of the target deceleration based on the amount of operation as also recited in claim 3. Thus, Walenty's disclosure does not anticipate the features recited in claim 3.

As regards claim 4, Walenty discloses a parking brake activated by an electric motor, but does not disclose setting in advance an upper limit value for vehicle deceleration or control of operation of the parking brake such that the vehicle deceleration does not exceed the upper limit value of deceleration as presently claimed. Rather, Walenty is silent as to monitoring and controlling braking based on a rate of vehicle deceleration, and instead discloses control based on increasing brake pressure in a ramped fashion until wheel slip occurs. Thus, Walenty's disclosure does not anticipate the features recited in claim 4.

2. Shirai discloses a method of diagnosing abnormalities in an electrically operated brake in an automotive vehicle. The braking system disclosed by Shirai includes electrically operated front disc brakes 22 and rear drum brakes 32, all of which are operated by a brake pedal 34. The braking system also includes a mechanically operated drum brake 36 operated in response to an emergency or auxiliary brake pedal 35, and an auxiliary brake operating parking brake pedal 42. Parking brake pedal 42 activates electrically operated front disc brakes 22. The braking system of Shirai includes an electronic control unit (ECU) 330 that receives output from an emergency brake pedal switch 349, a brake pedal switch 350, and a parking brake pedal switch 351. Each of these switches generates an OFF signal when in the non operated position, and an ON signal when in the operated position. The braking system also includes a longitudinal acceleration sensor 356 for generating a

signal indicative of the longitudinal deceleration of the vehicle.

Shirai discloses a first embodiment in which parking brake control (Fig 6, and in col. 19, line 32-col 20, line 21) is based on signals indicating the operating state of the brake pads such as output signals from the motor position sensors or braking force sensors. Shirai discloses a fifth embodiment (Fig 17, col. 37 and 38) in which a brake diagnosing routine includes comparison of calculated deceleration values of a drive wheel to a predetermined threshold deceleration value to determine the condition of the brake system.

As regards claim 3, as amended herein to include the features of cancelled claims 1 and 2, Shirai discloses a parking brake activated by an electric motor, but does not disclose operation of a parking brake that is controlled such that the vehicle is decelerated at a rate of deceleration of predetermined magnitude. Rather, Shirai discloses a means to diagnose abnormalities within the brake system which includes comparison of calculated deceleration values of a drive wheel to a predetermined threshold deceleration. Based on this comparison, a status signal is generated and the electric motors are operated to a non-braking condition. Thus, Shirai does not disclose controlling deceleration of a vehicle using a parking brake as recited in claim 3.

Shirai discloses a parking brake operation command that is issued based on the operation of a parking brake pedal 42. The position of parking brake pedal 42 is sensed by parking brake pedal switch 351, which produces an OFF or ON signal related to that position. Shirai does not disclose the magnitude of the predetermined target deceleration being set based on an amount of operation of parking brake pedal 42 as presently claimed. The deceleration threshold disclosed by Shirai is unrelated to the operation of the parking brake pedal 42, and instead is arbitrarily selected to reflect a normal value of deceleration as found under normal operating conditions.

Shirai does not disclose a switch that is held at the operation command only while kept depressed by the driver, an amount of operation constituted by the number of changeovers to the command operation position, or modification of the target deceleration based on the amount of operation as recited in this claim. Thus, Shirai's disclosure does not anticipate the features recited in claim 3.

As regards claim 4, Shirai discloses a parking brake activated by an electric motor, but does not disclose setting in advance an upper limit value for vehicle deceleration or control of operation of the parking brake such that the vehicle deceleration does not exceed the upper limit value of deceleration. Rather, Shirai discloses a means to diagnose abnormalities within the brake system which includes comparison of calculated deceleration values of a drive wheel to a predetermined threshold deceleration value for the drive wheel. Based on this comparison, a brake system status signal is generated and the electric motors are operated to a non-braking condition. Thus, Shirai's disclosure does not anticipate the features recited in claim 4.

3. Arnold discloses a control system and method for controlling an electrically operated parking brake system when that system is used, both when the vehicle is at rest and when the vehicle is in motion.

As regards claim 3, as amended herein to include the features of cancelled claims 1 and 2, Arnold discloses a parking brake activated by an electric motor, but does not disclose operation of the parking brake such that the vehicle is decelerated at a target deceleration of predetermined magnitude. Rather, Arnold is silent as to monitoring and controlling braking based on a rate of vehicle deceleration, and in fact does not appear to monitor vehicle acceleration/deceleration at all.

Instead, Arnold discloses modification of PWM pulse width of the electric motors depending on switch position (Fig 12).

Arnold discloses an operation command based on the operation of an operating member or switch by the driver, but does not disclose setting the predetermined magnitude of the target deceleration, and further does not disclose setting the predetermined magnitude of the target deceleration based on an amount of operation of the switch as presently claimed. Although Arnold states that "the way the switch is manipulated provides multiple functions" (col. 12, line 5), such functions are not detailed, and such general statement does not anticipate the claimed invention.

Arnold does not disclose a switch that is held at the operation command only while kept depressed by the driver, an amount of operation constituted by the number of changeovers to the command operation position, or modification of the target deceleration based on the amount of operation as recited in this claim. Thus, Arnold's disclosure does not anticipate the features recited in claim 3.

As regards claim 4, Arnold discloses a parking brake activated by an electric motor, but does not disclose setting in advance an upper limit value for vehicle deceleration or control of operation of the parking brake such that the vehicle deceleration does not exceed the upper limit value of deceleration. Instead, Arnold discloses modification of PWM pulse width of the electric motors depending on switch position (Fig 12). Thus, Arnold's disclosure does not anticipate the features recited in claim 4.

In summary, the applicant respectfully submits that none of the cited prior art references disclose or suggest a unique electric parking brake system in which a operation of the system is

controlled by a switch which changes over from a non-command position to an operation command position when depressed by the driver, which is held at the operation command position only while kept depressed by the driver, and in which a number of changeovers from the non-command position to the operation command position of the switch constitutes the amount of operation. The applicant further submits that none of the cited prior art references disclose or suggest a target deceleration. Thus, it is respectfully submitted that the rejections of claims 3 and 4 are overcome, and it is respectfully requested that the rejections be reconsidered and withdrawn..

Conclusion

In conclusion, applicant has overcome the Examiner's rejections as presented in the Office Action; and moreover, applicant has considered all of the references of record, and it is respectfully submitted that the invention as defined by each of the present claims is clearly patentably distinct thereover.

The application is now believed to be in condition for allowance, and a notice to this effect is earnestly solicited.

If the Examiner is not fully convinced of all of the claims now in the application, applicant respectfully requests that the Examiner telephonically contact applicant's undersigned representative to expedite prosecution of the application.

Favorable reconsideration is respectfully requested.